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Heuristics in the Creation of Commitment**

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The Manipulation of Cognitive Biases and
Heuristics in the Creation of Commitment

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ABSTRACT

Inducing commitment is an important concern for executives attempting to implement strategies. In this paper, the author develops a model of the process by which executives can encourage commitment in contributors through the promotion of specific cognitive heuristics and biases. Three specific hypotheses from this model are tested within Staw's (1981) escalating commitment framework.

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INTRODUCTION

The topic of organizational commitment is of increasing interest to management theorists. In addition to the many popular books which discuss the importance of commitment (Deal and Kennedy, 1982; Ouchi, 1981; Peters and Waterman, 1982), there is a long stream of academic work on the subject.

Salancik (1977) defines commitment as "a state of being in which an individual becomes bound by his actions and through these actions to beliefs that sustain the activities and his own involvement." And states, "Commitment is what makes us like what we do and continue doing it, even when the payoffs are not obvious" (1977, p. 62). Unlike the authors of many of the popular works dealing with commitment, Salancik notes that high levels of commitment can have negative consequences if a person or group is committed to the wrong course of action.

This perspective is shared by Staw (1981). He cites several examples, including the Vietnam War, in which high levels of commitment to organizations prevented decision makers from recognizing errors and tended to prolong failing courses of action. Staw's own research on "escalating commitment" (much of it summarized in his 1981 article) has helped to identify some of the conditions under which commitment to a failing course of action is likely to be strongest.

Creating commitment is one of the essential functions of leadership or, in Barnard's terms, one of the critical "functions of the executive" (1968, p. 230). Throughout this paper, the word "executive" will be used to denote those people in new or established organizations who take the leadership role and guide the organization in the

achievement of its strategic mission. In an uncertain and changing environment, an executive must convince others to contribute their resources (money, effort, etc.) to a course of action which is based on the executive's assumptions about the outcomes the course of action will produce. The ability to do this depends on some of the traits Bennis (1983) identified a study of 80 Chief Executive Officers and ten innovative leaders.

1. Vision: The capacity to create and communicate a compelling vision of a desired state of affairs--to impart clarity to this vision (or paradigm, context, frame--all those words serve) and induce commitment to it.
2. Communication and alignment: The capacity to communicate their vision in order to gain the support of their multiple constituencies.
3. Persistence, consistency, focus: The capacity to maintain the organization's direction, especially when the going gets rough.

Bennis, 1983, p. 18.

The executive must create confidence in contributors that the course of action will be successful and that he is in control of outcomes.

Throughout this paper, the word "contributors" will be used to refer to those individuals and institutions who's contributions of resources are necessary for a particular course of action to succeed. Investors must contribute money, employees must contribute their time, effort, and expertise, governments must sanction the venture and often contribute to it financially.

Discussions of the creation of commitment often focus on the affective or attitudinal dimension of commitment. Identification with the organization or leader is discussed; motivation to achieve the organization's or leader's goals, and so forth. However, there is also

a cognitive dimension to commitment, as is emphasized in Salancik's definition.

The discipline of behavioral decision theory can contribute to the understanding of organizational commitment through a treatment of the decision process involved in commitment. Much of the research in behavioral decision theory rests on the observation that human beings are limited in their ability to process information (Simon, 1976). Researchers in this area have identified a number of biases which result from cognitive limitations and heuristics, simplifying strategies or "rules of thumb," which people commonly use to reduce the amount of information they must consider in decision-making. These biases and heuristics form the basis of a model of the means by which commitment to a course of action may be created and maintained. The basic assumption underlying this model is that information may be manipulated by executives to encourage particular types of simplifying heuristics or biases in contributors in order to increase their confidence in a course of action and their commitment to it.

Much has been written about the separate impacts of individual cognitive heuristics and biases on managerial decision-making (Schwenk, 1984; Duhaime and Schwenk (forthcoming); Taylor, 1975; Nisbett and Ross, 1980; Hogarth, 1980; Hogarth and Makridakis, 1981). However, individual biases may interact with each other in organizational decisions involving multiple contributors who's cooperation and commitment is necessary for the organization to act. In this paper, a model of this interaction is developed and some of its implications are tested in a laboratory experiment.

IMPRESSION MANAGEMENT AND COGNITIVE SIMPLIFICATION

The literature on self-presentation (Goffman, 1959) and impression management (Schlinder, 1980) contains some useful insights about techniques which executives may use to manipulate heuristics and biases. These include various types of self-description designed to match the speaker's values to those of his audience, fulfill audience stereotypes, and to create impressions of the speaker's unique competence (Schlinder, 1980, pp. 178-193). They also include the use of personal appearance and the creation of appropriate surroundings (through the use of props and scenery) to create certain impressions in the audience (Schlenker, 1980, pp. 267-271).

However, those writing on impression management have not tied this process to the promotion of cognitive heuristics and biases. In this paper the link will be drawn between impression management and the promotion of specific cognitive biases which influence potential contributors' decisions and commitment. In the next sections, one heuristic (representativeness) and two biases (overconfidence and illusion of executive control) will be described and their role in promoting escalating commitment and entrapment will be discussed.

Vivid Anecdotal Information and Pallid Statistical Information: Encouraging the Representativeness Heuristic

Potential contributors to a course of action must decide whether its chances of success are great enough to justify their investment of money or time. In making this decision, there are often many types of information which may be used, including statistical information and vivid anecdotal information. There is evidence from business failures,

from observation of investment decision-making, and from laboratory experiments that people tend to give too much weight to vivid anecdotal information about executives or companies and too little to pallid statistical information (Borgida and Nisbett, 1977). Potential contributors may use vivid personal information to decide whether an executive or a company has qualities which represent the potential for success. They then use this assessment as the basis for their contribution decision.

Nisbett and Ross (1980, pp. 25-26) illustrate this process with the following example and discussion of the representativeness heuristic:

The present authors have a friend who is a professor. He likes to write poetry, is rather shy, and is small in stature. Which of the following is his field:
(a) Chinese studies or (b) psychology?

Those readers who quickly and confidently predicted "psychology" probably applied some version, whether sophisticated or crude, of conventional statistical canons. We congratulate these readers. We suspect, however, that many readers guessed "Chinese studies," or at least seriously considered that such a guess might be reasonable. If so, they probably were seduced by the representativeness heuristic. Specifically, they assessed the relative "goodness of fit" between the professor's personality profile and the predominant features of their stereotypes of Sinologists and psychologists. Finding the fit better for the former than for the latter, they guessed the professor's field to be Chinese studies.

In succumbing to the lure of the representativeness heuristic, what the reader likely has overlooked or not appreciated is some relevant category base-rate information. Let the reader who guessed "Chinese studies" now reconsider that guess in light of the relative numbers of psychologists and Sinologists in the population.

According to Nisbett and Ross, the statistical information which most readers possess about the relative frequency of the two occupations

is likely to be ignored if the anecdotal information is vivid and salient. They cite numerous experimental demonstrations of the biasing effects of vivid anecdotal information (1980, pp. 55-61). Hogarth (1980, pp. 31-33) suggests that if this anecdotal information is consistent or presents a consistent picture, it may discourage decision-makers from seeking other information.

Martin and Powers (1983) examined the effects of a vivid anecdote compared to statistical information dealing with the sincerity of a hypothetical company's policy of avoiding layoffs. MBAs given a vivid story of one employee's positive experience with the policy expressed more belief in the policy and commitment to the organization than those given statistics supporting the truthfulness of the policy.

It may be that investors in the DeLorean Motor Company fell prey to the representativeness heuristic. In this case statistical information for assessing the probable success of the new venture did exist.

Hillel Levin, in his book Grand Delusions: The Cosmic Career of John DeLorean (1983, p. 163-165) points out that there have been numerous attempts by entrepreneurs to enter the American automobile market. The last successful attempt had been by Walter Chrysler in 1924. Since then, many new autos like Kaiser-Frazer and the Tucker had failed. In 1974, Malcolm Bricklin had produced a two-seat safety-oriented sports car with gull-wing doors similar to DeLorean's. His company, financed partly by the Canadian government, had produced only 3000 cars over a period of a year before it failed. However, the investors, who lost an estimated \$120 million in the venture, generally did not discuss these

statistics in describing their reasons for investing but instead focused on John DeLorean's personal characteristics.

There is evidence that John DeLorean attempted to increase the salience of information about himself to encourage a kind of representativeness heuristic which reduced contributors' motivation to seek out and use other types of data. According to Levin:

For DeLorean, the impressive stack of press clippings was a potent weapon. No other entrepreneur in business history used publicity as well in amassing his seed capital, and he found that investors were as unlikely to look behind his hollow hype as reporters. In the skewed double standards of high finance, DeLorean underwent only the most cursory check into his background before he was loaned hundreds of millions of dollars. If there had been anything small-time about DeLorean, the banks and the British government might have persevered in turning up the business failures and court cases that followed his resignation from General Motors. (Levin , 1983, p. 323)

According to Levin, DeLorean's activities had the effect of creating tremendous confidence in bankers (p. 149), individual investors (p. 167-173, see quote 172), the British government (who provided financing for the plant in Ireland) conservative automobile dealers (p. 177-178), and employees (pp. 172-174). The news media was generally very laudatory towards DeLorean and did not report several expensive failing ventures in which DeLorean had been involved prior to the DeLorean Motor Company (these are reported in painful detail by Levine in pp. 101-139 of his book).

Dreman (1979, pp. 92-93) cites evidence for the operation of this heuristic in securities analysts' selection of promising stocks. He

contends that by providing large amounts of company-specific information, companies can induce investment advisors to use this heuristic when making recommendations on stock purchases. He cites an example of one analyst so knowledgable about the Clorox company that "he could recite bleach share by brand in every small town in the Southwest." However, this specific company information lead the analyst to ignore other information relevant to the company's stock's performance. He was unable to forecast the decline in the price from a high of 53 to 11.

Information Volume and Overconfidence

Anecdotal information may influence decision-makers' level of confidence in their choices as well as the choices themselves. The amount of information provided appears to be the factor which determines whether the information will lead to overconfidence. The effects of overconfidence have not yet been demonstrated in strategic decisions. However, they have been observed in other decisions of consequence. Though this tendency toward overconfidence exists in a wide variety of decisions, perhaps the most striking evidence comes from the study of investment decision-making.

Securities analysts possess large volumes of information on particular industries and companies, particularly those highly visible companies which are actively traded. However, Dreman (1979) provides extensive documentation to support the claim that the additional information on highly visible stocks does not allow securities analysts to develop more accurate forecasts of the performance of these companies or their stocks. He cites a number of studies (1979, pp. 142-149)

involving one-year earnings forecasts for over 800 companies altogether, show average forecast errors of over 14% overall. One study (Richards, Benjamin, and Strawser, 1977) examined the accuracy of earnings forecasts for companies across industries with different levels of visibility and found that the forecast accuracy was actually slightly worse for high visibility industries like office equipment & computers and retail stores than for companies in low visibility industries such as paper companies and banks.

A study by Cragg and Malkiel (1968) demonstrates the difficulty in using large volumes of company specific information. Dreman describes the results in this way:

The two professors studied the earnings projections of large groups of security analysts working for five important and highly respected investment organizations, including two major New York City bank trust departments, a mutual fund, and an investment advisory firm. Estimates were made for 185 companies for periods of from one to five years. The researchers found that most analysts' estimates were simply linear extrapolations of current trends, and that the correlations between the actual and the predicted earnings turned out to be very low. Cragg and Malkiel state that in spite of the vast amount of additional information analysts have, supplemented by frequent company visits, estimates are based on a continuum of past trends: "The remarkable conclusion of the present study is that the careful estimates of security analysts ... performed little better than those of (past) company growth rates." (Dreman, 1979, 147)

Finally, Dreman reports on the performance of favorite stocks selected by groups of professional investors and investment advisors (1979, pp. 250-252). These stocks tended to be the ones with the highest visibility in the years each survey was conducted. He collected information from 51 surveys involving over 6,500 participants during

the years from 1929 to 1976. In short, the stocks selected in these surveys did not show spectacularly good performance in the 12 months following the survey. Rather the stocks selected in 77% of these surveys underperformed the market (the S&P 500). Since this result is significantly worse than the results which would be predicted from a random selection of stocks, high visibility appears not to give an advantage in the prediction of stock performance. Dreman concludes that increased information merely increases investor's and advisor's overconfidence in their ability to predict a company's stock's performance without increasing the accuracy of prediction.

Overconfidence has also been demonstrated in other decisions of consequence. Oskamp (1962) in a study examining clinical case diagnoses by professional psychologists and students of psychology, showed that accuracy of diagnosis did not increase significantly as more case information was provided. However, confidence in judgment did increase dramatically as more information was provided. Apparently, more information allows people to generate more reasons to justify their decisions and hence increases their confidence.

A number of researchers have examined overconfidence in laboratory contexts (Fischhoff, Slovic, and Lichtenstein, 1977; Einhorn and Hogarth, 1978; Koriat, Lichtenstein, and Fischhoff, 1980; Oskamp, 1962). Following Tversky & Kahneman (1974), Fischhoff et al. (1977) suggested that peoples' level of confidence may be determined by the availability of reasons for confidence in memory. By increasing the salience of reasons for success of a venture, executives can increase their availability in memory.

Einhorn and Hogarth (1978) suggest that it is difficult for decision-makers to seek out and use information to disconfirm their beliefs or positions on issues (1978, pp. 396-399). They also note that confidence tends to rise with experience in particular types of decisions because confidence is a function of the number of successful similar decisions available in memory. However, accuracy of judgment may not increase with experience (1978, p. 395).

Koriat, et al. (1980) showed that considering reasons for a choice that they made increased subjects' overconfidence in the correctness of this choice. As will be shown in the next section, the information provided to contributors by executives can provide such reasons which will increase overconfidence.

The Illusion of Executive Control

Langer (1983, pp. 59-90) discusses a bias which affects people's assessments of their chance of success at a venture. This bias is called the illusion of control. She reports on six studies which show that subjects making a variety of decisions expressed an expectancy of personal success higher than the objective probability would warrant. They tend to overestimate their skill or the impact it will have on the outcome.

Langer suggests that we are subject to this illusion of personal control because of the way we collect information. She notes that as people constantly seek ways to control outcomes in the environment, they form hypotheses about the effects of their actions on these outcomes. In her words, they then "tend to seek out information that

supports their hypotheses while innocently ignoring disconfirming evidence" (1983, p. 24). Nisbett and Ross (1980) cite evidence which supports Langer's claim. This type of information search, of course tends to reinforce the illusion of personal control.

Executives interested in increasing contributors' commitment may encourage a similar process by selectively providing information which suggests that executives are in control of outcomes. There is evidence of such selective use of information from letters to shareholders in annual reports. These letters focus on statements about the actions of management and the causal links between these actions and positive environmental outcomes (Salancik and Meindl, 1984, p. 251). To quote Salancik and Meindl, "The extent of this tendency cannot be exaggerated: Managements were three times more likely to acclaim their contributions to the firm's good fortune than they were to make any other causal statement" (1984, p. 251). This serves to promote what Salancik and Meindl call "the illusion of managerial control." Even when a company's performance has been poor, its letters to shareholders generally contain little information about negative environmental impacts on performance. Management tends not to lay blame on the environment for failures because this draws shareholders' attention toward the influence of the environment and weakens the illusion of managerial control.

Escalating Commitment and Entrapment

As was mentioned earlier in the paper, a high level of commitment can be dangerous. If the executive's course of action is mistaken, then the biases and heuristics he encourages may result in escalating

commitment or entrapment in a failing course of action. The phenomenon of escalating commitment has received a good deal of research attention, though it has not previously been tied to the use of information to create cognitive biases.

Many difficult personal and organizational decisions involve an initial commitment of resources (time, effort, money, etc.) followed by results which suggest initial failure and a need for additional commitment which may save the venture. In such situations decision-makers must determine whether or not to commit the extra resources and risk "throwing good money (or effort) after bad." Examples provided by Duhaime and Schwenk (forthcoming) and Staw (1981) show that individuals, businesses, and countries sometimes continue to commit large resources to failing projects despite continued negative feedback. In retrospect, one wonders how this "escalating commitment" to these ill-fated ventures could have continued. A number of studies have dealt with this question.

Staw (1981) has summarized several studies and used them to develop a theoretical model of the variable affecting the commitment process. Staw (1976) used a business case in which study participants play the role of a corporate financial officer who is asked to allocate research and development funds to one of two operating divisions of a company. Subjects were then given feedback on their initial decision (either positive or negative, indicating success or failure) and asked to make a further allocation of R&D funds. Staw (1976) found that more funds were allocated after failure than after success. He also found that more funds were allocated when the subject was personally

responsible for the decision, by virtue of having made the initial decision, than when the earlier decision had been made by someone else.

Three subsequent studies used similar laboratory tasks (Staw and Fox, 1977; Staw and Ross, 1978; Fox and Staw, 1979). Staw and Ross (1978) used a laboratory task involving a loan for a development project and found effects due to information regarding the cause of the setback. Subjects allocated more funds when the indicated cause was exogenous to the program (unlikely to persist into the future) than when there was an endogenous cause (one likely) to continue). They also responded more strongly to this information after failure than after success.

Conlon and Wolf (1980), using Staw and Ross's (1978) development loan task, collected information on the problem-solving strategy of subjects. They found that subjects using a calculating strategy responded differently to information on the likelihood of the cause of the initial failure persisting into the future than did subjects who used a non-calculating strategy. Calculators did not retain as much commitment as non-calculators in the face of information indicating a long term cause of failure. This suggests that the way decision-makers frame and approach a decision may determine the likelihood they will escalate commitment.

Another line of research deals with psychological entrapment, a process which is essentially the same as escalating commitment. Teger (1980) discussed conditions under which decision-makers become entrapped because they feel they have "too much invested to quit."

Brockner, Shaw, and Rubin (1979) showed that subjects invested more when they had to make an explicit decision to terminate a series of investments than when the series was self-terminating. They also invested less if they set a limit on their investment and informed the experimenter of it before the experiment began.

Brockner, Rubin, and Lang (1981) found that entrapment was greater when subjects were informed of the advantages of investing a large amount than when they were given the virtues of investing conservatively. Social anxiety and the presence of an audience also lead to greater entrapment. Brockner, Fine, Hamilton, Thomas, and Turetsky (1982) investigated the notion that factors like the presence of an audience and information about costs have different impacts at different stages in the entrapment process. They found that cost information had effects on degree of entrapment when the information was introduced early in the process. The perceived presence of an audience affected entrapment when the audience was introduced late in the process.

It is possible for executives promoting a course of action to encourage escalating commitment and entrapment through the manipulation of information. The information they provide may cause contributors to attribute failures to exogenous causes (Staw and Ross, 1978), to use a noncalculating strategy (Conlon and Wolf, 1980), to neglect investment limits (Brockner, et al., 1979), to consider the advantages of investing large amounts (Brockner, et al., 1981), and to ignore information about costs (Brockner, et al., 1982).

Summary

Thus far, it has been argued that concepts from behavioral decision theory can be helpful in understanding the process by which commitment to a course of action is created and maintained. Since executives always control at least some of the information received by contributors, they can manipulate this information to increase contributor's confidence in a course of action and their commitment to it. The material discussed previously suggests that executives may do this by providing large amounts of vivid anecdotal information about themselves which presents a consistent picture to draw contributors' attention away from statistical information related to the probability of success of the course of action. In other words, the provision of this type of information can encourage the representativeness heuristic in contributors and will make them overconfident in their judgment. The focus on information about the executive will encourage an "illusion of executive control" over the circumstances. This, in turn, will lead to higher levels of commitment to the course of action.

These points are summarized in Figure 1.

Insert Figure 1 here

The behavior of executives like John DeLorean suggest that they do use vivid anecdotal information to encourage confidence and commitment in contributors. There is evidence from laboratory and field research that such information does affect contributor decision-making.

The model described in Figure 1 suggests three specific hypotheses about the effects of large amounts of vivid, personal, anecdotal information on contributor decision-making.

- 1) Such information will lead contributors to focus on the executive's personal characteristics in making the decision about whether to contribute to the course of action.
- 2) It will lead to increased confidence in the course of action.
- 3) It will lead to increased commitment of resources to the course of action.

METHOD

To test these three hypotheses, a laboratory experiment was conducted using a financial decision task which has been used in many previous experiments on commitment. The task is the A&S Decision Case which is described in several previous papers (Staw, 1976 and 1981; Staw and Fox, 1977). This is a business case which describes a company with two operating divisions (consumer products and industrial products). Subjects play the role of a corporate financial officer who's duty it is to allocate research and development funds to one of these two divisions. After making the initial allocation, subjects receive feedback in the form of statistical data on sales growth and profitability for both of the divisions for a three-year period following the initial allocation. Subjects are then informed that \$20 million in R&D funds is available to them to allocate to the previously funded division or to reserve for other uses. This money can be allocated in addition to a \$10 million standard R&D allocation each

division receives. Subjects then decide how much they will allocate to the previously funded division and fill out a post-task questionnaire.

Ninety-six upper-division business school undergraduates participated in the experiment. All subjects received feedback indicating that in the three years following the initial allocation, sales for the division had continued to increase but net profits had declined and the division had experienced net losses in the last two years. Since the A&S case description points out that profitability is important to corporate management, these results in some sense indicate failure for the division.

In addition to choosing one of the two divisions for the initial allocation and selecting a dollar amount for the second allocation, subjects were asked to provide three probabilities. After their initial choice of the industrial or consumer products division, they were asked to give their probability that their chosen division would show positive net profits when summed over the next three years. After their second allocation decision, they were asked to give their probability of positive net profits for the next three years with only the \$10 million standard allocation and with the additional allocation they had just made.

Subjects were also asked to give the reasons they would use to justify their second allocation decision on a post-task questionnaire dealing with various aspects of the experiment. These reasons were used to test the first hypothesis, that personal information leads

contributors to focus on executives' personal characteristics in making contribution decisions.

Treatment Conditions

Each subject was randomly assigned to one of three treatment conditions. In the first condition, after their initial choice of the industrial or consumer products divisions for additional R&D funding, subjects received feedback indicating their chosen division had failed to achieve profitability and had sustained increased losses.

In the second treatment condition, in addition to the failure feedback on the division they chose for the initial allocation, subjects received written information that a new R&D manager had been appointed to the division following its failure to achieve profitability. A one-paragraph description of this R&D manager was provided. It stated that he had been identified by an executive search firm, that he formerly worked for the profitable consumer or industrial products division of another company, that he was bright, hard-working, and achievement-oriented, and that he felt profitability was an important goal for the consumer or industrial products division of the A&S Company. Only after receiving this information were subjects required to make their second allocation decision.

In the third treatment condition, subjects received failure feedback and a description of the newly-hired R&D manager as did the subjects in the second treatment condition. However, in this treatment condition, the description was much longer and contained a greater volume of vivid personal information about the new R&D manager than

the description given to subjects in the second treatment condition. This description was designed to provide more detailed vivid material on each point mentioned in the report given to subjects in the second treatment condition but not to convey any new information about the R&D manager beyond that which was received by the subjects in the second treatment condition. While the description in the second treatment condition merely stated that the new R&D manager was hard-working, achievement-oriented, and very competent the description in this treatment condition stated a specific number of hours the R&D manager worked per week, stated that he had received a high score on an achievement motivation test, and gave a statement by a former colleague who regarded him as one of the best in the industry. While the description in the second treatment condition merely stated that he was interested in improving the division's profitability, the statement in the third condition stated that he had written a memo containing specific plans for improving profitability.

Since the descriptions in treatment conditions two and three contained essentially the same information about the new R&D manager, any differences in confidence or commitment would have to be due to the vivid anecdotal nature of the information in the third treatment condition.

RESULTS

The results related to the three hypotheses will be dealt with in reverse order for ease of presentation. Hypothesis 3 stated that contributors given vivid personal descriptions of executives will

contribute more resources to a course of action directed by the executives. This was tested by using the amount of money committed to the initially chosen division in the subjects' second investment decision. These amounts for each treatment condition are shown in Table 1.

Insert Table 1 here

As can be seen from the table, subjects in the "No New Manager" condition invested the least, those in the "New Manager-Pallid Description" condition invested somewhat more, while subjects in the "New Manager-Vivid Description" condition invested the most. A one-way ANOVA showed this difference to be significant ($F = 6.94$, $p < .003$). Subsequent Duncan multiple range tests showed that the subjects given the vivid description invested significantly more than those given no description of a new manager ($p < .01$) and significantly more than those given a pallid description ($p < .05$). While those given the pallid description invested more than those given no description, this difference was not significant.

Hypothesis 2 stated that contributors given vivid personal information will have more confidence in a course of action directed by an executive. This was tested by using subjects' probabilities of their initially chosen division's success (positive net profits when summed over the next three years) given only the \$10 million standard allocation and with whatever additional money they decided to allocate in the second phase of the task. These probabilities are shown in Table 1.

From the subjects' assessment of the probability of success with only the standard allocation, it can be seen that those given the vivid description of the new manager were most confident, followed by those given the pallid description and by those given no description. This difference is in the predicted direction but a one-way ANOVA showed that this difference was not significant ($F = 2.19$, $p < .12$).

In subjects' assessment of the probability of success with their additional allocation a slightly different pattern is found. Subjects given the "New Manager-Vivid Description" treatment expressed the most confidence and those given the other two treatments expressed roughly the same degree of confidence. A one-way ANOVA found this difference to be significant ($F = 4.69$, $p < .015$). Subsequent Duncan Multiple Range tests showed that subjects given the vivid description of the new manager produced significantly higher probabilities of success than those in each of the other two treatment conditions ($p < .05$).

Finally, Hypothesis 1 states that contributors receiving vivid information on an executive's personal characteristics will focus on these characteristics in making commitment decisions. This hypothesis was tested by examining the reasons subjects in the "New Manager-Vivid Description" and the "New Manager-Brief Description" condition gave for making their second allocation decision. In response to the open ended question at the end of the post-task questionnaire, subjects in the "New Manager-Pallid Description" condition gave a total of 94 reasons (an average of 2.94 per subject) while subjects in the "New Manager-Vivid Description" condition gave a total of 121 reasons (an average of 3.78 per subject).

These reasons were divided into two categories: 1) reasons dealing with the new manager, and 2) other reasons (those dealing with the division, the company as a whole, or external factors). "New Manager-Pallid Description" subjects gave a total of 16 statements mentioning the new manager to justify their second allocation decision. Thus, the proportion of reasons dealing with the new manager for this treatment group was .170. "New Manager-Vivid Description" subjects gave a total of 42 statements dealing with the new manager. Thus, the proportion for this group was .347. A test for difference between these proportions showed that the subjects given the vivid description had a significantly higher proportion of reasons that dealt with the new manager ($p < .003$). This indicates that these subjects focused more on the new manager's characteristics in making their second allocation decision than did the "New Manager-Pallid Description" subjects.

DISCUSSION

The results of this experiment show that large amounts of vivid, personal, anecdotal information about an executive provide more reasons for confidence in the course of action promoted by the executive. These reasons influence contributors' decisions about whether to commit additional resources to an organization despite the presence of pallid statistics showing that the organization's course of action is not succeeding (hypothesis 1). The results also show that such information increases commitment (of funds) to the course of action the new manager would direct (hypothesis 3).

However, the results provide only limited support for the second hypothesis, that such information increases confidence in the organization's course of action. Subjects' confidence in the division's success with only the standard allocation did not differ significantly by treatment (though the differences were in the predicted direction). Subjects given the vivid descriptions were significantly more confident than those in the other two treatment conditions that the division would succeed with their additional allocation. However, since these subjects also allocated more funds, their confidence might be due in part to the fact that their initially chosen divisions would have more resources to work with. It may be that subjects given the vivid information in this experiment felt that the additional allocation was essential for the new R&D manager to improve the performance of the division and that without the additional resources the probability of success was not improved substantially even with the new manager.

By and large, the data cited at the beginning of this paper and the results of the experiment support the arguments advanced in the paper. Those soliciting support for a course of action under their direction may provide large amounts of vivid anecdotal personal information to draw potential contributors' attention away from statistical information relating to the probable success of the course of action. The results of the experiment provide support for the assertion that this strategy is effective. However, since this experiment used a simulated business decision and student subjects, the results may not generalize to field settings. The evidence from this experiment should be

supplemented with further field research on the effects of vivid personal information on contributors.

This research extends current efforts to apply the concept of cognitive heuristics and biases to strategic decision-making. Earlier efforts (Barnes, 1984; Duhaime and Schwenk, 1985; Schwenk, 1984) have focused on the effects of individual biases at various points in the decision process. This paper describes one way in which biases might interact to reinforce each other.

Further, this paper demonstrates the value of a behavioral decision theory perspective in understanding and explaining the process of promoting commitment to a course of action. Since the creation of commitment is an essential part of the process of leadership, the behavioral decision theory perspective offers a new view of leadership and a new basis for suggestions on improving leader effectiveness.

On the other hand, the effective use of this type of information by leaders may create a condition in which contributors and the organization become entrapped in a failing course of action. For this reason, the use of vivid personal information poses ethical and practical problems for a leader wishing to create and maintain commitment but also interested in preserving objectivity on the part of contributors so that they can check his own tendencies toward entrapment in a course of action.

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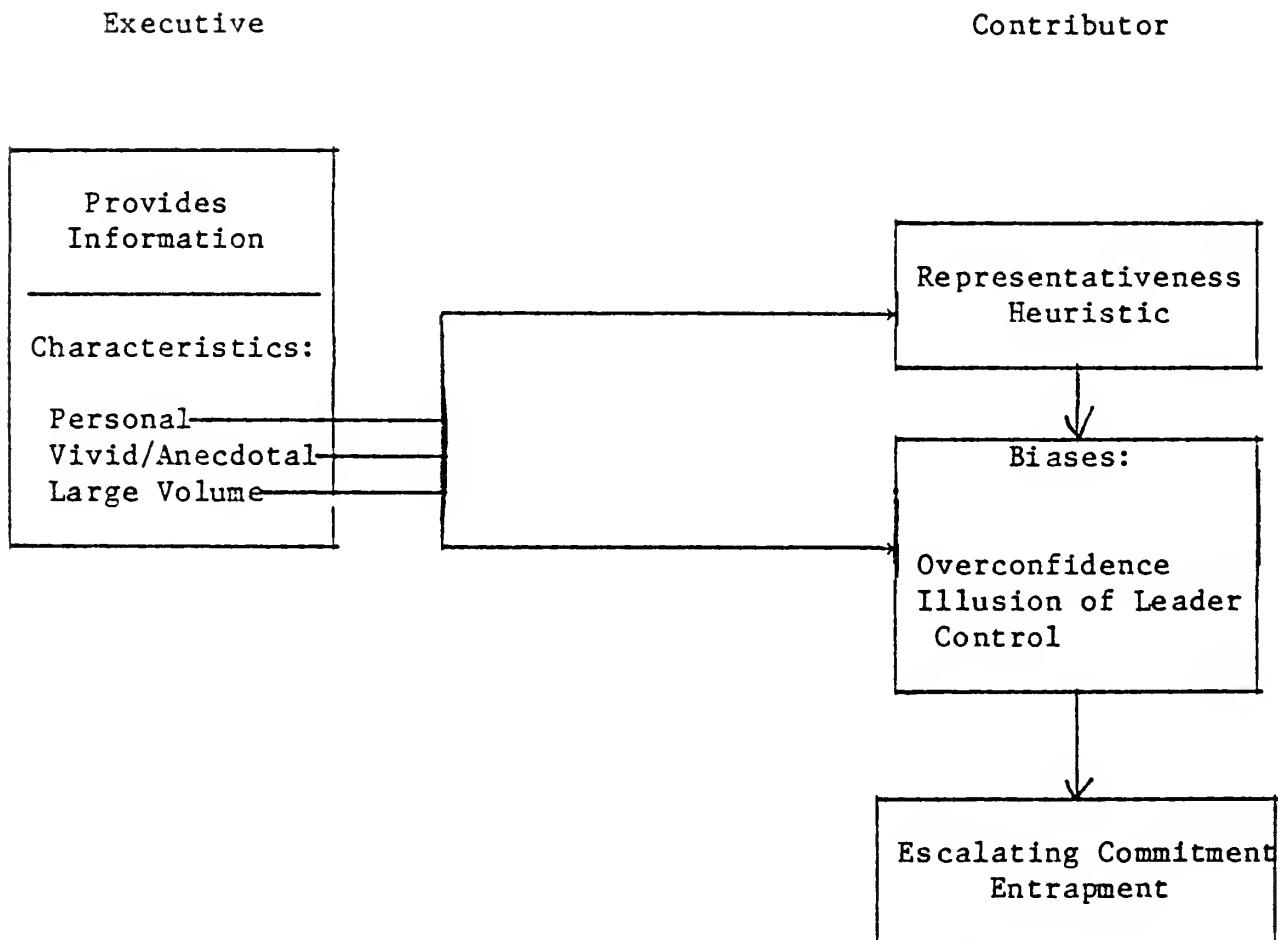
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Table I

Treatment N=32/treatment	Dollars Allocated to Previously Funded Division	Probability of Success Without Added Allocation	Probability of Success With Added Allocation
No New Manager	\$ 8.406 million	.45	.57
New Manager-- Vivid Description	12.531 million	.52	.71
New Manager-- Pallid Description	10.0 million	.40	.58

Figure 1

The Process of Promoting Commitment



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